भारतीय मानक
Indian Standard

IS 11230 : 2023

उपयोगिता दस्ताने के लिए चमड़ा — विशिष्टि

(पहला पुनरीक्षण)

Leather for Utility Gloves — Specification

(First Revision)

ICS 59.140.30

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February 2023 **Price Group 5**

Leather, Tanning Material and Allied Products Sectional Committee, CHD 17

FOREWORD

'This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards after the draft finalized by the Leather, Tanning Materials and Allied Products Sectional Committee had been approved by the Chemical Division Council.

A glove is a flexible but close-fitting adornment for the most active body appendage, the hand. Further, the hand is capable of movement, pivoted at wrist, in almost every direction.

Leather becomes effectively mildew-resistant without adversely influencing its non-toxic character by treating it with 0.1 percent of *O*-phenyl phenol or 2-(thiocyanomethylthio) benzothiazole or octyl-iso-thiazolinone or p-chloro-m-Cresol based on dry weight of the finished leather. These substances may be offered either solely or in any combination but not exceeding 0.1 percent. Chemical substances with proven dangerous effect on the wearer, end user or consumers shall not be used. Any other fungicide or a combination of fungicides which is known to be harmless to skin in small dosages may be substituted, but the optimum dosage should be worked out by experiment. Extreme caution is to be exercised since the excess dosage of fungicide is harmful and often causes chafing, irritation and dermatitis of skin. To arrive at the optimum dosage of effective and non-toxic fungicides, the method given in LB : 3 of IS 6191 : 1971 'Methods of micro-biological colour fastness and microscopical tests for leather' shall be followed.

This standard was first published in 1985. Subsequently, due to developments in leather technology, the Committee felt the necessity to revise this standard. In this revision, the scope has been broadened to include all types of finished leather. Accordingly, the requirements of leather, Table 1 and Table 2 of the standard have been modified.

The composition of the committee responsible for formulation of this standard listed in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

LEATHER FOR UTILITY GLOVES — SPECIFICATION

(First Revision)

1 SCOPE

This standard prescribes the requirements and the methods of test and sampling for all types of finished leathers for utility glove.

2 REFERENCES

The standards listed in Annex A contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of these standards.

3 TERMINOLOGY

For the purpose of this standard, te definitions given in IS 1640 shall apply.

4 REQUIREMENTS

4.1 Raw Material

The material shall be sheep, goat or calf skins free from grain defects.

4.2 Tanning

The skin shall be suitably tanned, either by chrome or a combination of chrome and aluminium salts or vegetable tanning materials or using any other alternative tannages. The tanning materials may be used in combination with chrome tanning salts or syntans. They may also be dyed for desired shades and to render fastness properties, fat liquored and shall have good run.

4.3 Fungicide Additives

At the end of tanning operation before drying, suitable fungicide shall be incorporated in the leather. Fungicides used to promote resistance to fungi in the leather shall be effective and substances with proven or final concentration of fungicides on leather are prescribed in Table 2.

4.5 Chemical Requirements

The material shall also comply with the chemical requirements given in Table 2.

4.6 Mildew Resistance

The material shall not support mould growth. The material shall show no growth of mildew, when examined visually after the completion of the test prescribed in LB : 2 of IS 6191.

4.7 Resistance to Perspiration

The material shall not show any change in area and shall not be stiff after completion of perspiration test as prescribed in LF : 7 of IS 6191.

5 PACKING AND MARKING

5.1 Packing

The leather pieces shall be packed as agreed to between the purchaser and the supplier.

5.2 Marking

The leather pieces or packages or both shall be marked legibly with the following particulars:

a) Manufacturer’s name and Address;
b) Recognised trade-mark, if any;
c) Type; and
d) Year of manufacture.

5.2.1 The leather pieces or packages or both may also be marked with the Standard Mark.

5.2.2 *BIS Certification Marking*

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

6 SAMPLING AND CRITERIA FOR CONFORMITY

The scale of sampling and criteria for conformity shall conform to IS 5868.

Table 1 Physical Requirements for Leather for Utility Gloves

(*Clause* 4.4)

Sl No.	**Characteristics**	**Requirements**	**Method of Test, Ref to**	
			IS 5914	IS 6191
(1)	(2)	(3)	(4)	(5)
i)	Tensile Strength, kgf/cm^2, *Min*	150	LP : 6	-
ii)	Elongation at break, percent, *Min*	40	LP : 6	-
iii)	Tear strength, kg, *Min*	3	LP : 7	
iv)	Double hole stitch tear strength, kg/cm thickness, *Min*	50	LP : 8	-
v)	Shrinkage temperature in °C, *Min*	90	LP : 10	-
vi)	Colour fastness:			
	a) Contrast grading after 512 revolution (dry)	4	-	LF : 1
	b) Contrast grading after 256 revolution (wet)	4	-	LF : 1
	c) Contrast grading after perspiration, test after 256 revolution (staining)	3	-	LF : 7

Table 2 Chemical and Innocuousness Requirements of Leather for Utility Gloves

(*Clause* 4.5)

Sl No.	**Characteristics**	**Requirements**	**Method of Test, Ref to**
(1)	(2)	(3)	(4)
i)	*p*H of water solubles	Not less than 3.5. If less than 3.5 the difference of *p*H dilution of factor 10 times shall not be more than 0.6	IS 582 (Part 9)
ii)	Aromatic amines released from Azo dyes (each individual amines), mg/kg, *max*	20	IS 582 (Part 5/Sec 1) ISO 17234-1 IS 582 (Part 5/Sec 2) ISO 17234-2
iii)	Chromium (VI), mg/kg, *max*	3.0	IS 582 (Part 11/Sec 1) ISO 17075-1 IS 582(Part 11/Sec 2) ISO 17075-2

Table 2 (*Concluded*)

Sl No.	Characteristics	Requirements	Method of Test, Ref to
(1)	(2)	(3)	(4)
iv)	Polychlorophenols content including each isomer as applicable		IS 14575
	Pentachlorophenol (PCP), mg/kg, *max*	0.5	
	Tetrachlorophenols (TeCPs), mg/kg,*max*	0.5	
	Trichlorophenols (TCPs), mg/kg, *max*	1.0	
	Dichlorophenols (DCPs), mg/kg, *max*	1.0	
	Monochlorophenols (MCPs), mg/kg	2.0	
v)	Formaldehyde, mg/kg, *max*		IS 16297(Part 1) ISO 17226-1
	Adults:	75	
	Children:	20	
vi)	Soluble Mineral Tanning Agents		IS 582(Part 6/Sec 1) ISO 17072 -1
	Aluminium, mg/kg, *max*	50	
	Chromium, mg/kg, *max*	50	
	Titanium, mg/kg, *max*	50	
	Zirconium, mg/kg, *max*	50	
vii)	Fungicides/Preservatives		IS 582 (Part 8) ISO 13365-1
	(Sum of individual substances in any combination should not exceed 1 000 mg/kg)		
	2-(Thiocyanomethylthio) benzothiazole (TCMTB), mg/kg, *max*	1 000	
	o-Phenylphenol (OPP), mg/kg, *max*	1 000	
	Octyl-iso-thiazolinone (OIT), mg/kg, *max*	1 000	
	p-Chloro-*m*-Cresol (PCMC), mg/kg, *max*	1 000	

ANNEX A

(*Clause* 2)

LIST OF REFFRRED INDIAN STANDARD

IS No.	*Title*
IS 582	Methods of chemical testing of leather
(Part 5) : 2018	Determination of certain azo colorants in dyed leathers
(Sec 1) : 2018	Determination of certain aromatic amines derived from azo colorants
(Sec 2) : 2018	Determination of 4-aminoazobenzene
(Part 6/Sec 1) : 2018	Determination of metal content, Section 1 Extractable metals
(Part 8) : 2018	Determination of the preservative (TCMTB, PCMC, OPP, OIT) content in leather by liquid chromatography
(Part 9) : 2022	Determination of *p*H and difference figure
(Part 11) : 2022	Determination of chromium (VI) content in leather,
(Sec 1) : 2022	Colorimetric method
(Sec 2) : 2022	Chromatographic method
IS 1640 : 2007	Glossary of terms relating to hides, skins and leather (*first revision*)
IS 5868 : 1983	Method of sampling for leather (*first revision*)
IS 5914 : 1970	Methods of physical testing of leather
IS 6191 : 1971	Micro-Biological colour fastness and microscopical tests for leather
IS 14575 : 1999	Determination of pentachlorophenol (PCP) in leather — Method of test
16297 : (Part 1): 2014	Leather — Chemical determination of formaldehyde content: Part 1 Method using high performance liquid chromatography
ISO 17070 : 2019	Jute agro textiles for growth of plant and suppression of weeds — Specification

ANNEX B

(*Foreword*)

COMMITTEE COMPOSITION

Leather, Tanning Material and Allied Products Sectional Committee, CHD 17

Organization	*Representative*(*s*)
Central Leather Research Institute, Chennai	Dr K. J. Sreeram **(*Chairperson*)** Dr C. Muralidharan (*Alternate*)
All India Skins & Hide Tanners and Merchants Association, Chennai	Shri Mohan M. Sreenivas Shri S. Mohammed Hassan (*Alternate*)
A T C Chemicals India Private Limited, Chennai	Shri Subbarayan Govardhanan (*Alternate*)
A V Thomas Leather & Allied Products Private Limited, Chennai	Shri D. Raja Babu Shri V. Ranganathan (*Alternate*)
Bata India Limited, Bihar	Representiative
Central Footwear Training Institute, Chennai	Shri K. Murali
Central Pollution Control Board, Delhi	Shri N. K. Gupta
Council of Leather Exports, Chennai	Shri K. Srinivasan
Department of Industrial Policy and Promotion, New Delhi	Shri Shaish Kumar Shri Nand Lal (*Alternate*)
Directorate General of Quality Assurance, Kanpur	Shri S. Chakraborty Shri T. P. Banerjee (*Alternate*)
FDDI, Chennai	Shri Ezhil Arasu Shri Vikas Verma (*Alternate*)
Govt College of Engineering and Leather Technology, Kolkata	Dr Sanjoy Chakraborty Dr Goutam Mukherjee (*Alternate*)
Indian Finished Leather Manufacturers & Exporters Association, Chennai	Shri N. Shafeeq Ahmed Shri P. K. Aslam Basha (*Alternate*)
Indian Leather Products Association, Kolkata	Ms Arpita Paul
Indian Leather Technologist Association, Kolkata	Shri Arnab Jha Dr Gautam Mukherjee (*Alternate*)
Indian Shoe Federation, Chennai	Shri Abhijit Seth
Khadi & Village Industries Commission, Mumbai	Shri S. S. Sil Shri M. L. Masur (*Alternate*)
Kings International Limited, Kanpur	Shri Taj Alam Shri G. S. Kumaran (*Alternate*)
Leather Chemicals Manufacturers Association, Mumbai	Shri B. D. Bhaiya

Organization	*Representative*(*s*)
National Institute of Fashion Technology, Chennai	SHRI E. SIVASAKTHI DR M. ARAVENDHAN (*Alternate*)
Niti Aayog, New Delhi	SHRI CHANDAN SAHA
Office of The Development Commissioner, New Delhi	DIRECTOR (*Leather*)
Reagent leather Services, Chennai	SHRI NIAZ AHMED
SGS India Private Limited, Gurugram	SHRI M. GOPU SHRI G. MUTHUKUMAR (*Alternate*)
Stahl India Private Limited	SHRI NAGARATHNAM SHRI SURYANARAYANAN (*Alternate*)
The CONCERT Trust, Chennai	SHRI S. KOMANDUR SRINATH SHRI M. R. KRISHNAN (*Alternate*)
UP Leather Industry Association, Agra	SHRI IMRAN SIDDIQUI
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In personal capacity *[GM-Corporate Analytical at Kawman Pharma (AR&D)]*	SHRI GANESH JEEVAN
In personal capacity (*SA3, Thendral Flats, 2, Balakrishnan Road, Valmikinagar,Thiruvanmiyur - 600041*)	DR S. SADULLA

Member Secretary
MS PREETI PRABHA
SCIENTIST 'C'/DEPUTY DIRECTOR
(CHEMICAL), BIS

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